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NOTES ON THE BIRDS OF KENTUCKY

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As a third project in the program to obtain specimens of birds and mammals for the United States National Museum from the eastern part of our country, the Museum carried on field work in 1938 in the State of Kentucky. W. M. Perrygo, of the Museum staff, continued in charge of the field party. During the spring he was assisted by James Cole and in the fall by Herbert G. Deignan, of the division of birds, and by Gregor Rohwer. The party left Washington on April 15 and remained in the field until July 15. In the fall, work began on September 15 and ended on November 15.

In the following account I have presented the results of a study of the birds obtained, with records of all specimens taken. Also I have included reference to a few other specimens from Kentucky in the U. S. National Museum. Most of these were taken by Charles Wickliffe Beckham near Bardstown, Nelson County, and came many years ago as a gift from the collector. For a long time these skins constituted the only material from Kentucky in the collection. While Beckham published his observations¹ it is pertinent to check the identification of these specimens so far as they are available according to modern understanding of the species covered. There are also a few skins prepared by Edgar Alexander Mearns at Lexington (in November and December 1898) and casual specimens from other sources.

¹ A list of the birds of Bardstown, Nelson Co., Kentucky. Journ. Cincinnati Soc. Nat. Hist., vol. 4, July 1883, pp. 136-147.

List of the birds of Nelson County. Kentucky Geol. Surv. (issued Sept. 1885, according to an entry made on the cover of the copy in the division of birds, U. S. National Museum), pp. 1-58.

The data from this material are made available here for those who may be working on a list of the birds of the State or who are interested in the general distribution and occurrence of birds in this area. I have made no search of literature for other records, as assembly of that information is properly the field of others. In some cases I have included notes made by our field representatives where specimens were not taken.

With previous material from West Virginia and Tennessee available identification of the Kentucky collection has offered no particular difficulties. The State is one of large extent, so that in some cases there has been representation of both eastern and western forms of the same species. Some southern races come in along the southern border, particularly in the southwestern counties, but in the main Kentucky is north of the area of intergradation of most species having both northern and southern forms. Much work remains to be done on the distribution of birds everywhere through the State, but it is hoped that the account herewith will prove useful to those engaged in such investigations.

The work was made possible through permits issued by Major James Brown, director, Division of Game and Fish, of the Department of Conservation of Kentucky. We are under much obligation to Major Brown for his cooperation and to the enforcement officers under his direction who were universally helpful. The Department of Highways of Kentucky cooperated in issuing a set of official State license plates for the truck used for travel, required because of the length of stay of the party.

The expenses of the party in the field were carried by the income of the W. L. Abbott Fund of the Smithsonian Institution.

Throughout the entire period of work our men received the most courteous treatment, particularly in the privilege that was given them of entering private lands in order to make the necessary collections. We are deeply indebted for this friendly assistance without which the work would not have been possible.

The itinerary for the work was arranged so as to visit the eastern and western areas in both spring and fall, in order to get as representative a collection as one season's work would permit. The field party had available a small closed truck, which allowed them to cover a much wider area than would otherwise have been possible.

Field investigations began April 19, 1938, at Brandenburg in Meade County, with the weather cool but clear. This region covered the level bottomlands near the Ohio River and the rolling hills of the uplands where there were woods of cedar and oak. Through special permission investigations were made in an extensive tract of land under development for a national park at Rock Haven, where there was much of inter-

est. On May 4 the party moved to Union County with a base at Henderson, to remain until May 19. Collections were made principally near Waverly in low country where there were cypress swamps and ponds, and in the vicinity of Uniontown near the Ohio River. Some material was taken in the open fields about Corydon.

On May 20 Perrygo moved to Hickman in the extreme southwestern corner of the State, remaining until June 1. In this region arms of Reelfoot Lake extend across the State line from Tennessee. The work centered mainly in the swamps of this section and in the adjacent higher ground around the edges of the many cottonfields. By wading some distance it was possible to reach an island in the northern arms of the lake. The cypress growth was especially fine. On June 1 the men examined the small neck of land belonging to Fulton County that lies in a bend of the Mississippi River below New Madrid, Mo., where it is cut off from the rest of the State by a southward extension of Missouri. On June 2 work was moved to Monticello, where until June 18 Perrygo covered Wayne County, collecting near Monticello, Coopersville, and Rockybranch, with one trip into McCreary County in the vicinity of Stearns. There were woods of pine and oak here that extended over rolling ridges and higher knobs, with other types of woodland in the creek bottoms.

Near Cumberland a base was established in an abandoned C. C. C. camp on June 20, and from here collections were made on Black Mountain, which rises to 4,150 feet and is the highest mountain in the State. Most of the work was done between 3,800 and 4,100 feet. There were no spruce or balsam trees on this mountain, and typical Canadian Zone conditions were lacking. Rain and cold storms came regularly and interfered with studies to some extent. Some specimens were obtained also on the long ridge of Pine Mountain southeast of Whitesburg.

On July 2 the party removed to Belfry, a mining town, and located at a tourist camp, remaining until July 10. From this point Perrygo crossed into West Virginia to obtain a few additional specimens wanted, under a permit issued for the purpose by the Conservation Commission of West Virginia through H. W. Shawhan. In the meanwhile Cole remained in the Kentucky area.

On leaving here the men made camp near Fullerton beside an Indian mound on the bank of the Ohio River and remained until July 14. Weather continued stormy at intervals with heavy hail, and on the day before they left a strong wind blew over their tents. From this point the party returned to Washington for the summer.

For the fall season Perrygo had as assistants Herbert G. Deignan, of the division of birds, and Gregor Rohwer, employed specially for this work. On September 16 this party located in Middlesboro to work principally on Log Mountain, which lies 7 miles west. Here the writer

joined them from September 23 to 25, the rest remaining until September 29. The American Association Coal Co. gave permission for work on its lands here. Log Mountain is covered with deciduous forest and is rather dry, but good collections both of birds and mammals were made between 2,000 and 2,900 feet elevation. Some specimens were taken in the lowlands southeast of Middlesboro.

On October 1 the party was established south of the town of Berea and continued investigations here in Rockcastle and Madison Counties, near Mount Vernon, Berea, and Richmond, until October 7. A considerable part of this area is poorly drained so that there are many wet meadows, making conditions for small birds excellent. From October 7 to 9 the men were located at Morehead, Rowan County, where they had the cooperation of Prof. Wilfred A. Welter, of State Teachers College, in selecting desirable areas for work. From here they continued to the Ohio River below Covington to record the fall migration, collecting until October 15 near Ghent and English in Carroll County, near Burlington and Florence in Boone County, near Warsaw in Gallatin County, and near Bedford in Trimble County. The bottomlands along the Ohio and the bluffs and rolling hills inland gave a diversified terrain in which were many birds.

On October 16 they removed to Madisonville, where special attention was given to cypress swamps and the adjacent areas in Hopkins, McLean, and Muhlenberg Counties. Collections were made near Sacramento, South Carrollton, and Madisonville, the region proving an excellent one. On October 28 a new base was selected at Cadiz for work in the narrow tract of land between the Tennessee and Cumberland Rivers in Trigg County, and at points farther to the east. Birds were obtained mainly at Canton, with a few specimens from Golden Pond, Cadiz, Princeton, and Cerulean.

On November 6 Perrygo located at Brownsville for the final work of the season in the cedar-covered hills, oak woods, and farmlands of the region near Mammoth Cave. From here collections were made at Roundhill and Fairview, but most of the material was obtained near Brownsville. The studies for the season ended on November 14.

Family ARDEIDAE

ARDEA HERODIAS WARDI Ridgway: Ward's Heron

Two adult females taken on an arm of Reelfoot Lake $4\frac{1}{2}$ miles southwest of Hickman on May 24 and 26 are of this race. Their measurements might fit either the northern or southern form of great blue heron, being within the maximum range of the former and the minimum of the latter, but the color of the neck and of the back is distinctly pale, which places them with the southern bird. Measure-

ments of the two are as follows: Wing 465, 473; tail 165, 176; culmen from base 142.3, 144.9; tarsus 169, 185 mm.

The presence of this race in southwestern Kentucky need occasion no surprise since Ward's heron is already known as the breeding bird of Reelfoot Lake in Tennessee.² It is probable that Ward's heron is confined in Kentucky to this general region and that the birds recorded by Perrygo near Uniontown along the Ohio River on May 10 and 13, and near Waverly on May 9, were the typical great blue heron (*Ardea herodias herodias*). This, however, is supposition, as no specimens were obtained.

CASMERODIUS ALBUS EGRETTA (Gmelin): American Egret

Two beautiful birds in full plumage, male and female, were taken at an arm of Reelfoot Lake 4½ miles southwest of Hickman, May 23.

BUTORIDES VIRESCENS VIRESCENS (Linnaeus): Eastern Green Heron

The first one seen was found near Brandenburg on April 28. At Uniontown one was taken near the Ohio River on May 13, and at Waverly another was secured on May 16. One was shot near Rockybranch, Wayne County, June 8, and another was seen near Stearns, McCreary County, June 16. In fall one was recorded near the Ohio west of Burlington on October 10.

BOTAURUS LENTIGINOSUS (Montagu): American Bittern

A male was taken near the Ohio River 6 miles west of Burlington on October 10.

Family CATHARTIDAE

CATHARTES AURA SEPTENTRIONALIS Wied: Eastern Turkey Vulture

This widely distributed bird was observed at many localities. One specimen was taken, a male, 4 miles southwest of Warsaw on October 12. A flock was seen on this occasion. The wing in this bird measures only 521 mm., but the outer primaries seem to have been molted recently and are probably not quite grown, so that the measurement would have been increased somewhat. The tail is 245 mm.

CORAGYPS ATRATUS (Meyer): Black Vulture

Records for this southern species are as follows: Hickman, May 31 (specimen); Cerulean Springs, Trigg County, November 5; Roundhill, Butler County, November 7 and 12; Brandenburg, April 22; and Warsaw, October 12. None were observed in the more eastern sections of the State. The bird taken, a female, has a wing measurement of 412 mm.

² Ganler, A. F., Tennessee Avifauna No. 2, Feb. 1933, p. 12.

Family ACCIPITRIDAE

ACCIPITER STRIATUS VELOX (Wilson): Sharp-shinned Hawk

Two immature birds were taken near Canton, November 1, and 11 miles south of Brownsville, November 11. One was seen on Shady Spur, 7 miles west of Middlesboro, on September 17.

BUTEO JAMAICENSIS BOREALIS (Gmelin): Eastern Red-tailed Hawk

During the breeding season one of these hawks was seen on June 10 near Monticello, and others at about 4,000 feet elevation on Black Mountain, 4 miles southeast of Lynch, June 25 and 30. On Log Mountain, 7 miles west of Middlesboro, one or two were seen on nearly every visit between September 19 and 26. An adult and an immature bird were taken here. The only other one recorded was seen near Canton, Trigg County, on November 1.

BUTEO LINEATUS LINEATUS (Gmelin): Northern Red-shouldered Hawk

Records for this hawk are as follows: Hickman, May 21 and 28; Canton, November 1; Cerulean Springs, November 5; Madisonville, October 22; Sacramento, October 17; Uniontown, May 10, 13, and 17; Waverly, May 12; Belfry, Pike County, July 5.

Two males and one female, taken near the northern extremity of Reelfoot Lake, $4\frac{1}{2}$ miles southwest of Hickman, in dark color are typical of the northern race. They measure as follows: Males, wing 308, 309, tail 191, 205, culmen from cere 21.5, 22.5, tarsus 80.5, 85.6 mm.; female, wing 342, tail 204, culmen from cere 23.1, tarsus 88.7 mm. A young male not quite grown was taken from the nest at this point on May 28. Near Uniontown a female was shot on May 13 that is in the streaked plumage of the immature stage, considerably worn.

CIRCUS CYANEUS HUDSONIUS (Linnaeus): Marsh Hawk

Single birds were seen at Roundhill on November 9 and near Richmond on October 4.

PANDION HALIAETUS CAROLINENSIS: Osprey

One was seen at Rock Haven, Meade County, April 25.

Family FALCONIDAE

FALCO PEREGRINUS ANATUM Bonaparte: Duck Hawk

One was seen 4 miles east of Monticello, June 14.

FALCO COLUMBARIUS COLUMBARIUS Linnaeus: Eastern Pigeon Hawk

One was seen on September 22 by H. G. Deignan near the fire tower on the summit of Log Mountain west of Middlesboro.

FALCO SPARVERIUS SPARVERIUS Linnaeus: Eastern Sparrow Hawk

Found sparingly throughout the State as the following records indicate: Cerulean Springs, Trigg County, November 5; Waverly, May 9; Madisonville, October 21 and 22; South Carrollton, October 22; Brandenburg, April 23; Roundhill, November 9; Brownsville, November 12; Monticello, June 11; Mount Vernon, October 1 and 4; 4,100 feet elevation on Black Mountain, 5 miles southeast of Lynch, June 29; Fullerton, July 13. The majority of the observations were of one bird or occasionally of two in a day.

Family TETRAONIDAE

BONASA UMBELLUS TOGATA (Linnaeus): Canada Ruffed Grouse

The only one recorded during the present work was seen 5 miles west of Mount Vernon. As it was not taken its identification to subspecies is based on supposition only.

Family PERDICIDAE

COLINUS VIRGINIANUS VIRGINIANUS (Linnaeus): Eastern Bobwhite

Of two shot near Bedford, Trimble County, October 13, a male is typical of the eastern bobwhite, while a female shows a strong infusion of the characters of the so-called "Mexican" bobwhite that has been imported so abundantly in the Eastern United States. This hybrid bird is distinctly grayer above than the native stock, but at the same time it shows more brown than the introduced bird. Below, the markings are those of the eastern bobwhite.

Other quail were seen near Corydon, May 14; at Brownsville, November 8; Golden Pond, Trimble County, November 3; and Rockybranch June 13.

COLINUS VIRGINIANUS TEXANUS: Texas Bobwhite

Of this introduced bird, usually called the "Mexican quail," a typically marked adult male was shot near Burlington along the Ohio River on October 10. This specimen has the gray upper surface and the heavily barred breast characteristic of this form. Major James Brown, Director, Division of Game and Fish of the Department of Conservation, informs me that the State authorities have imported quail from Mexico for years, and also have brought brood stock from elsewhere in the United States. The present wild stock of bobwhite is therefore of mixed blood to a high degree.

Family RALLIDAE

FULICA AMERICANA AMERICANA Gmelin: American Coot

One was obtained along the Ohio River near Burlington, October 11.

Family CHARADRIIDAE

OXYECHUS VOCIFERUS VOCIFERUS (Linnaeus): Killdeer

On June 1 an adult male was collected on the bank of the Mississippi River in that small area of land cut off from Fulton County in the bend of the river directly south of New Madrid, Mo. Two others were taken at Golden Pond, November 4, and two more at South Carrollton, October 25. A number were recorded at Greenup on July 12 and 13. The species is distributed in suitable localities throughout the State.

Family SCOLOPACIDAE

PHILOHELA MINOR (Gmelin): American Woodcock

Single birds were seen near Ghent, October 14, and at Roundhill, November 7.

CAPELLA DELICATA (Ord): Wilson's Snipe

One was seen near Golden Pond on November 3.

ACTITIS MACULARIA (Linnaeus): Spotted Sandpiper

One was taken near Hickman on May 26.

TRINGA SOLITARIA SOLITARIA Wilson: Eastern Solitary Sandpiper

Near Waverly two females were taken on May 9 and another on May 16. These three are all representative of the eastern race, as indicated by small size and immaculate inner web of the outer primary. The wing measurements are 127.4, 129.7, and 130 mm.

CATOPTROPHORUS SEMIPALMATUS INORNATUS (Brewster): Western Willet

A female taken on the bank of the Ohio River 2 miles northeast of Uniontown on May 5 has the following measurements: Wing 210, tail 84, culmen from base 66.7, tarsus 68.2 mm.

Family COLUMBIDAE

ZENAIIDURA MACROURA CAROLINENSIS (Linnaeus): Eastern Mourning Dove

Specimens of the mourning dove were taken as follows: 4½ miles southwest of Hickman, May 31; Canton, October 29; Madisonville, October 20 and 21; Waverly, May 16; Rock Haven, April 25 and 26; Rockybranch, June 7; Monticello, June 15. All show the darker color of the eastern race, with no approach to the paler western bird. The species was seen in almost all localities visited, the last in fall being noted near Roundhill on November 7.

Family CUCULIDAE

COCCYZUS AMERICANUS AMERICANUS (Linnaeus): Yellow-billed Cuckoo

Specimens were secured as follows: Waverly, May 17; Monticello, June 15; Middlesboro, September 17 and 25; and Morehead, October 8, this being the last one recorded for fall. Individuals were seen near Quincy on July 12 and 13.

COCCYZUS ERYTHROPHALMUS (Wilson): Black-billed Cuckoo

This cuckoo was taken near Uniontown on May 10 and 3 miles east of Waverly on May 16, these being the only days on which the species was observed.

Family STRIGIDAE

OTUS ASIO ASIO (Linnaeus): Southern Screech Owl

In the three specimens from Kentucky at hand there is one female in gray phase collected near Lexington on December 5, 1898, by E. A. Mearns with the wing measuring 163 mm., and one in red phase from 4 miles southwest of Florence, shot on October 11, 1938, by Perrygo and Deignan, with the wing 158.5 mm. A red male from Fairview, November 10, measures 149 mm. These dimensions are all within the limits assigned to the southern bird, which on the basis of these skins seems to be the resident form of the State. The northern race perhaps may reach Kentucky during winter.

STRIX VARIA VARIA Barton: Northern Barred Owl

The barred owl was collected at Madisonville on October 21, South Carrollton on October 24, and near Roundhill on November 11. Another was obtained near Brandenburg on May 2, and one was recorded near Rockybranch on June 13. All the specimens show the feathering of the foot found in the northern bird.

Family CAPRIMULGIDAE

ANTROSTOMUS CAROLINENSIS (Gmelin): Chuck-will's-widow

Near Monticello, Wayne County, one was calling on June 7.

ANTROSTOMUS VOCIFERUS VOCIFERUS (Wilson): Eastern Whip-poor-will

One was seen on April 16 at Cannonsburg in Boyd County, and one was heard calling 4 miles east of Cumberland, Harlan County, on June 23.

Family MICROPODIDAE

CHAETURA PELAGICA (Linnaeus): Chimney Swift

The chimney swift was first observed in spring at Brandenburg on April 18.

Family TROCHILIDAE

ARCHILOCHUS COLUBRIS (Linnaeus): Ruby-throated Hummingbird

In the western section of the State a female was taken near Waverly on May 16 and a male $4\frac{1}{2}$ miles southwest of Hickman on May 30. On Black Mountain hummingbirds were common in June, and a female was secured on June 25. Others were observed on Log Mountain near Middlesboro from September 21 to 28.

Family ALCEDINIDAE

MEGACERYLE ALCYON ALCYON (Linnaeus): Eastern Belted Kingfisher

Observed at Brandenburg on April 23, at Uniontown on May 10, and near Middlesboro on September 19 and 23.

Family PICIDAE

COLAPTES AURATUS AURATUS (Linnaeus): Southern Flicker

The only specimen obtained of this southern race, distinguished only by smaller size, is a male taken 11 miles south of Brownsville, Edmonson County, on November 11. This bird has the following measurements: Wing 146.5, tail 98.6, culmen from base 35.5, tarsus 28.7 mm.

As *C. a. auratus* nests throughout most of western Tennessee, further collections of flickers should be made along the southern border of Kentucky during spring and summer to determine whether the southern bird may not extend a short distance into the southern counties. The specimen from Brownsville comes from an area where *luteus* may be the breeding form (though this is supposition only), in which case it would be a wanderer from farther south.

COLAPTES AURATUS LUTEUS Bangs: Northern Flicker

The northern flicker was collected as follows: $4\frac{1}{2}$ miles southwest of Hickman, May 21; South Carrollton, October 22; Roundhill, November 11; Brandenburg, April 21; Brownsville, November 10; English, Carroll County, October 12; Lexington, December 5 (taken by E. A. Mearns); Log Mountain, near Middlesboro, September 17 and 23; 3800 feet elevation on Black Mountain, near Lynch, June 23; and Fullerton, July 13. Immature birds only recently from the nest were taken as follows: Rockybranch, June 13; 3900 feet elevation on Black Mountain, near Lynch, June 24; and Fullerton, July 13. The adults are all characterized by a wing size from 151.5 to 156.7 mm.

A male from near the northern arm of Reelfoot Lake in Fulton County, southwest of Hickman, has the wing 153.5 mm., and so has the size of *luteus*, a matter of interest since birds from near Horn-

beak, Obion County, Tenn., only a short distance to the south, are *auratus*. Specimens taken on Black Mountain on June 23 and at Fullerton on July 13 have the tips of the primaries broken by wear so that they seemingly have small measurements, though in reality they are the northern bird.

One male from Middlesboro has a few red feathers in the moustachial streaks on each side of the head.

CEOPHLOEUS PILEATUS PILEATUS (Linnaeus): Southern Pileated Woodpecker

Adult specimens of this great woodpecker were obtained as follows: 4½ miles southwest of Hickman, May 21 and 26; South Carrollton, October 25; and Brownsville, November 10 and 11. These all agree in the small size that marks the southern form of this bird. In three males the wing measures 212, 225, and 227 mm., and in two females it is 220 and 224 mm. It will be noted that all come from the southern half of the State, but it seems probable that this is the race that extended formerly throughout Kentucky.

A young female nearly grown was secured near the northern arm of Reelfoot Lake southwest of Hickman, May 30, and another near Coopersville in Wayne County, June 8. Among other records of interest one was observed 4 miles southeast of Brandenburg, April 27, and several were recorded in Wayne County near Rockybranch on June 7 and 13 and 4 miles east of Monticello, on June 10. Two were observed near Mount Vernon on October 3. Pileated woodpeckers were found along the Cumberland River near Canton on October 31 to November 2 and in the same general region 5 miles northeast of Golden Pond on November 3. Two were seen near Roundhill, in Butler County, November 9.

CENTURUS CAROLINUS (Linnaeus): Red-bellied Woodpecker

This handsome woodpecker is common in the State, being represented by specimens from the following localities: Near Hickman, May 24; Canton, October 31 and November 2; South Carrollton, October 22; Uniontown, May 10; Roundhill, November 7 and 9; Rock Haven, April 26; Ghent, October 11; Rockybranch, June 14; Monticello, June 10; Mount Vernon, October 1; Lexington, November 17, 21, and 25 and December 1, 1898 (taken by E. A. Mearns); 2,800 and 2,900 feet elevation on Log Mountain, 7 miles west of Middlesboro, September 19 and 21.

Measurements of these Kentucky specimens are as follows: Males (10 specimens), wing 124.6–132.7 (128.9), tail 71.6–82.8 (76.5), culmen from base 28.3–32.5 (30.9), tarsus 22.1–23.7 (22.4) mm. Females (8 specimens), wing 121–132.6 (126.3), tail 69.3–77.3 (74.2), culmen from base 27.0–29.7 (28.2), tarsus 20.0–24.3 (21.8) mm. These dimensions agree fairly closely with those of a small series from Ten-

nessee. Two males from Hickman have a suffusion of red across the upper throat.

MELANERPES ERYTHROCEPHALUS ERYTHROCEPHALUS (Linnaeus): Eastern Red-headed Woodpecker

This woodpecker was of irregular distribution, though in places it was fairly common. In the nesting season it was recorded at Rock Haven on April 25 and 26, eight being seen on the first date mentioned. One was taken at Brandenburg, on April 30. Another was obtained at Monticello on June 11. In fall a number were found around Madisonville, October 20 and 21, and at Sacramento, October 17. Near Middlesboro three were seen at 2,900 feet elevation on Log Mountain on September 19, and an immature bird with a few red feathers appearing on the side of the head and the neck was taken.

Adult specimens secured all agree in size with the dimensions assigned to the eastern race as the following measurements show: Males (3 specimens), wing 133.5, 138.9, 141.2, tail 70.9, 74.7, 77.1, culmen from base 27.9, 29.2, 30.3, tarsus 21.2, 22.8, 22.8. Female (1 specimen), wing 134.1, tail 76.2, culmen from base 28.1, tarsus 21.4.

SPHYRAPICUS VARIUS VARIUS (Linnaeus): Yellow-bellied Sapsucker

Fall migrants were first observed near Mount Vernon on October 1, and two skins were obtained here on October 3. Other specimens came from Cerulean, November 5; Canton, November 2; South Carrollton, October 22; Roundhill, November 9; Brownsville, November 11; and Ghent, October 14. There is one skin in the collection obtained by Beckham at Wickland, Nelson County, on November 26, 1881.

DRYOBATES VILLOSUS VILLOSUS (Linnaeus): Eastern Hairy Woodpecker

Specimens of this common woodpecker were secured as follows: Golden Pond, November 3; Waverly, May 11; South Carrollton, October 22 and 25; Roundhill, November 9; Ghent, October 12, 13, and 14; Lexington, November 17, 1898 (taken by E. A. Mearns); Berea, October 6; Rockybranch, June 14; 2,800 feet on Log Mountain, 7 miles west of Middlesboro, September 23; 4,000 feet elevation on Black Mountain, near Lynch, June 23. Young birds fully grown were taken at Waverly, May 11, and Monticello, June 10.

While these are all identified as typical *villosus*, this is done with some reservation as to birds from the western part of the State, since specimens from this section in slightly smaller size show approach to the southern race *audubonii*. The region is distinctly one of intergradation between northern and southern birds, and specimens should be examined from along the Mississippi River where it seems probable that *audubonii* may occur.

In the present collection three skins from the cypress swamps near South Carrollton in Muhlenberg County are puzzling, since, while one male has the wing 117.3 mm., two females measure only 114.4 and 114.8 mm. The dimensions of the females are distinctly within the upper size range of *audubonii*. It may be noted that a downy woodpecker from this same area was also intermediate between the northern and southern forms, so that here there seems to be a restricted region that may be considered as definitely southern in its affinities entirely cut off except along its drainage to the Ohio from other influences of a southern nature. One male from Lexington also shows small size as the wing measures only 115.6 mm. Females from Golden Pond, Trigg County, measure 116.0 and 116.4 mm., and one from Waverly, Union County, has the wing 116.1 mm.

Aside from the three small birds mentioned size range in the wing in the series is as follows: Males, 116.6 (much worn) to 122.4 mm.; females 116.0 to 116.7 mm.

DRYOBATES PUBESCENS MEDIANUS (Swainson): Northern Downy Woodpecker

An excellent series of this common bird was obtained as follows: Hickman, May 21 and 25; Canton, October 29; Madisonville, October 21; South Carrollton, October 18; Roundhill, November 7 and 9; Brownsville, November 10; Rock Haven, April 25; Ghent, October 11; Burlington, October 11; Lexington, November 17 and December 1, 1898 (collected by E. A. Mearns); Mount Vernon, October 1, 3, and 6; Monticello, June 9; Rockybranch, June 7; Stearns, June 16; 2,000 to 2,800 elevation on Log Mountain, near Middlesboro, September 20, 21, and 23; 4,000 feet elevation on Black Mountain near Lynch, June 23 and 29. In these specimens there is some gradation in size, birds from the southwestern section and from the southern counties west of the mountain area being only slightly larger in wing measurement than the southern race. These skins, regardless of sex, range from 91.1 to 92.5. Specimens from Brandenburg, Burlington, Ghent, Rock Haven, and Lexington are larger, running from 92.2 to 95.1 mm. in length of wing. In the entire series there are four skins that are slightly below the size ordinarily accepted for *medianus*. These include a female from near Hickman with a wing 90.5 mm., though another taken at the same time and place measures 91.1 mm. These two agree with others from the Reelfoot Lake area in Tennessee, and while somewhat intermediate they are considered to be the northern form. There is also a male from Rockybranch taken on June 7 that measures 89.9 mm., and one shot at 4,000 feet elevation on Black Mountain near Lynch that is only 89.0 mm., but these two have the wing abraded and worn so that the small measurement is false, being due to breakage and loss at the tips of the longer primaries. All the birds listed are identified as

medianus, which appears to be the resident breeding form throughout the State. A single male from South Carrollton taken on October 18 with the wing 90.5 mm. comes within the maximum size limit of the southern *pubescens* but is considered only as a tendency toward an intermediate condition and is therefore placed with *medianus*. A female taken at the same time has the wing 91.5 mm.

Dr. Lawrence E. Hicks³ speaks of specimens from the lowlands of eastern and southeastern Kentucky as similar to two birds taken along the Ohio River near Proctorville and South Point in extreme southern Ohio, which have been identified by Oberholser as *D. p. pubescens*, though not wholly typical. As noted above, specimens I have seen from southwestern Kentucky while intermediate seem nearer *medianus* and are so identified. The male listed from South Carrollton, Ky., comes nearest to *pubescens*, as it has a dark breast, but until further information that may cause a change in opinion is available it seems necessary to list all the Kentucky material that I have seen as *medianus*.

DRYOBATES PUBESCENS NELSONI Oberholser: Nelson's Downy Woodpecker

In the series of downy woodpeckers there is one female, taken 2 miles north of Mount Vernon, Rockcastle County, October 3, that stands out from the others in the pure white color of the under surface and so attracts immediate attention. This bird measures as follows: Wing 99.0, tail 63.2, culmen from base 17.6, and tarsus 17.3. From its large size and light color it seems without question to be a migrant of the far northern Nelson's woodpecker, being apparently the most southern point at which this form has yet been taken.

Family TYRANNIDAE

TYRANNUS TYRANNUS TYRANNUS (Linnaeus): Eastern Kingbird

Specimens were obtained as follows: Waverly, May 6 and 11; Brandenburg, April 27; near Coopersville, Wayne County, June 8.

MYIARCHUS CRINITUS BOREUS Bangs: Northern Crested Flycatcher

The crested flycatcher was common in a dense cypress swamp near the northern arm of Reelfoot Lake southwest of Hickman, where specimens were taken on May 27. Others were obtained at Waverly on May 6 and 9, while the first one of the season was secured at Brandenburg on April 30. An adult male in rather worn plumage was shot near Monticello on June 15, and at Rockybranch an adult female was taken on June 14 and a young bird just from the nest on June 15.

³ Auk, 1939, p. 84.

As in the case of birds from Tennessee, the Kentucky specimens are typical of the northern race, being marked from the southern form by smaller bill and light dorsal coloration.

SAYORNIS PHOEBE (Latham): Eastern Phoebe

In the nesting period the phoebe was secured at Waverly, May 17; Brandenburg, April 28; Monticello, June 10 and 11; and Belfry, Pike County, July 4. The birds were common in the fall, being secured at this season at Canton, October 31; South Carrollton, October 18 and 22; Roundhill, November 9; Burlington, October 11; Mount Vernon, October 3 and 4; and Middlesboro, September 28.

EMPIDONAX FLAVIVENTRIS (Baird and Baird): Yellow-bellied Flycatcher

A female was collected in a cypress swamp about 4 miles southwest of Hickman, May 20.

EMPIDONAX VIRESCENS (Vieillot): Acadian Flycatcher

The specimens taken include the following: Hickman, May 21, 25, 27; Uniontown, May 10; Brandenburg, April 28; Monticello, June 9, 10.

MYIOCHANES VIRENS (Linnaeus): Eastern Wood Pewee

This is one of the common flycatchers of the State, being taken as follows: Near Hickman, May 21, 24, 25, and 30; Uniontown, May 10 and 17; Brandenburg, May 3; Rockybranch, June 13; Coopersville, June 3; Middlesboro, September 20, 21, and 23; 4,100 feet elevation on Black Mountain, near Lynch, June 21, 22, and 23.

Family ALAUDIDAE

OTOCORIS ALPESTRIS PRATICOLA Henshaw: Prairie Horned Lark

In summer a horned lark was seen but not taken near Monticello, June 17. On October 27 a flock of nine was seen near South Carrollton, and a female taken is of the present race. There are also in the U. S. National Museum three males and one female, collected at Lexington November 30, 1898, by E. A. Mearns, that belong to the present form. Perrygo records 12 horned larks at Roundhill, Butler County, November 9, and 5 more at the same point on November 12, but he did not secure specimens.

Family HIRUNDINIDAE

RIPARIA RIPARIA RIPARIA (Linnaeus): Bank Swallow

The bank swallow was observed at Brandenburg on April 28, and one was taken at Uniontown on May 5. Others were recorded at Rockybranch, Wayne County, June 8 and 13.

STELGIDOPTERYX RUFIPENNIS SERRIPENNIS (Audubon): Rough-winged Swallow

The six specimens secured come from the following localities: Waverly, May 12; Uniontown, May 5; Cloverport, May 4; and Rockybranch, June 15. Others were seen at Monticello, June 9; Lynch, June 23; and Belfry, July 4.

PROGNE SUBIS SUBIS (Linnaeus): Purple Martin

Recorded at Rockybranch on June 8, 12, and 15.

Family CORVIDAE**CYANOCITTA CRISTATA CRISTATA (Linnaeus): Northern Blue Jay**

With regard to the blue jay the western part of Kentucky represents an area where there is approach to the southern form, most of the few breeding birds seen having the brighter blue color and more extended white on wing and tail of the northern form but ranging somewhat small for the average of that bird. Two males from near the northern arm of Reelfoot Lake measure 123.8 and 127.8 mm. in length of wing but are definitely bright blue above. This is of particular interest when it is remembered that birds from only slightly farther south in Obion County, Tenn., are nearer the southern form. A male from Waverly shot on May 11 is even deeper blue, though it measures only 122.5 mm., while another from Morganfield nearby, with the wing 132.9 mm., meets the full requirements of *cristata* in color, markings, and size. Two males from Brandenburg, measuring 127.2 and 129 mm., are a little small but otherwise typical of *cristata*. A male from 4,100 feet elevation on Black Mountain near Lynch, with the wing tip rather worn still measures 130 mm. Other breeding birds that agree with the northern type in color come from Quincy, July 11 and 13, though in these the ends of the primaries are much frayed from wear so that their actual measurements (119.6 and 128.7 mm.) are 5 to 10 mm. or so below what they would have been when the birds were in proper feather. An immature bird just from the nest was secured here.

Birds were taken in fall as follows: Madisonville, October 24 (male, wing 128 mm.); Sacramento, October 17 (males 127.4, 136.1, female 127.2); English, Carroll County, October 12 (127); Brownsville, November 10 (130.6); and Morehead, October 8 (125). On the basis of size part of these are intermediate, but in color and in amount of white they belong with *cristata*.

The intermediate character of the blue-jay population of the State is easily evident from this brief account. The interpretation presented may be subject to some modification with more material but is the best that can be given at present.

CYANOCITTA CRISTATA FLORINCOLA Coues: Florida Blue Jay

The only bird in the series available that seems to represent the southern form of the blue jay is an adult female taken 3 miles south of Coopersville, Wayne County, June 3. This specimen has a wing measurement of 127 mm., which is within the maximum recognized by *florincola*, though a little larger than many. In its dorsal color it agrees with skins from northern Tennessee, as it does in the reduced amount of white on the secondaries, tertiaries, and tip of the tail. It is somewhat intermediate but nearer the southern form. It is probable that the breeding bird from elsewhere along the southern border of Kentucky west of the mountain area may belong here also, although birds from Hickman belong with the northern group.

CORVUS BRACHYRHYNCHOS BRACHYRHYNCHOS Brehm: Eastern Crow

The breeding crows of Kentucky as represented in the available collections, while in part slightly intermediate toward the southern form, are referred in the main to the northern subspecies. Further collecting is necessary, probably in considerable amount, to determine the actual status of the nesting form along the southern border except in the west. The southern race as a breeding bird seems to come into the State along the mountains in the southeast.

Males taken near Hickman on May 21 have the wing 305 and 314 mm. and the bill 49.8 and 50.2 mm. thus resembling the longer-winged, larger-billed *brachyrhynchos*. The specimen with the apparently shorter wing of 305 mm. has the ends of the primaries considerably worn, so the true measurement in fresh plumage would have been appreciably greater. An immature male just from the nest was taken at the same time as the adults mentioned. A male from Waverly, May 5, with the wing 331 mm. and the bill 50 mm. is very large. Specimens taken near Brandenburg fit also in the category of the northern race as two males shot April 23 and May 3 have the wing 308 mm. In one the bill measures 53.3 mm. The tip of the culmen in the second is broken by shot but the bill is definitely large. A female killed May 3 with the wing considerably worn measures 289 and 47.8 mm. The April bird may have been a northern migrant, but the two taken on May 3 were nesting.

The following specimens assigned to *brachyrhynchos* were taken in fall: Princeton, November 5 (wing 311); South Carrollton, October 18 (wing 307, culmen 50.1 mm.); Brownsville, November 12 (wing 315); and Mount Vernon, October 6 (one female with wing 310 and culmen 49.3, another with wing 293 and culmen 48.4). The second female from Mount Vernon approaches *paulus*.

CORVUS BRACHYRHYNCHOS PAULUS Howell: Southern Crow

Four of the crows collected by Perrygo and his associates on the basis of smaller size are referred to the southern race. A male taken September 29 near the town of Middlesboro has the wing 289 mm. and the culmen 47.8 mm. It is presumably a bird from this general region since the date is too early for any extended migration or wandering.

The race *paulus* nests in the mountains of northeastern Tennessee and might, therefore, be expected to breed in the Middlesboro area. A male taken at Burlington on October 11 has the wing 290 mm. and the culmen 46.3 mm. A female from Brownsville shot on November 12 measures in the wing 300 mm. and in the culmen 46.1 mm. and one from Ghent 282 mm. and 46.5 mm. The smaller wing and short, slender bill place these with *paulus*. They seem to represent post-breeding wanderers.

Family PARIDAE

PENTHESTES CAROLINENSIS CAROLINENSIS (Audubon): Carolina Chickadee

Four skins taken on September 20, 23, and 26 at elevations from 2,000 to 2,800 feet on Log Mountain, between 7 and 8 miles west of Middlesboro, agree with specimens from the mountain area of eastern Tennessee in having slightly darker dorsal coloration and lighter buffy brown on the sides, differing in this from birds from central and western Kentucky. Male and female taken at 4,000 feet elevation on Black Mountain $4\frac{1}{2}$ miles southeast of Lynch show the same characters. These are referred to true *carolinensis*, agreeing with skins in similar stage of plumage from near Charleston, S. C., the type locality. The Kentucky specimens represent the most northern limit known for this race and are probably at the northern edge of its range. They show some approach in their slightly larger size to *extimus*.

PENTHESTES CAROLINENSIS EXTIMUS Todd and Sutton: Northern Carolina Chickadee

This race of the Carolina chickadee, marked by slightly paler back and brighter buffy-brown sides, together with slightly larger size, is found throughout Kentucky except in the southeast sections of the State. Specimens identified as this form were taken as follows: At the northern arm of Reelfoot Lake near Hickman, May 27 (two fully grown immature birds) and 28; Waverly, May 6; Canton, October 29; South Carrolton, October 18; Brandenburg, April 21 and 22; Brownsville, November 8; Roundhill, November 7; Burlington, October 10; Mount Vernon, October 1; Coopersville, June 6; Monticello, June 4; and Quincy, July 11.

The black-capped chickadee was not found in the mountains on the eastern border but may occur at times as a winter migrant along the Ohio River.

BAEOLOPHUS BICOLOR (Linnaeus): Tufted Titmouse

This familiar species, distributed throughout the State, was recorded in all the localities visited except on the higher levels of Black Mountain. Specimens were obtained as follows: Near Hickman, May 20 and 28; Canton, October 29; Waverly, May 9 and 11; Madisonville, October 21; South Carrollton, October 18; Brandenburg, April 21 and 22; Roundhill, November 9; Brownsville, November 8; Ghent, October 14; Bardstown, January 18, 1882 (taken by C. W. Beckham); Lexington, December 1, 1898 (taken by E. A. Mearns); Mount Vernon, October 3 and 6; Monticello, June 15; Coopersville, June 6; 2,000 to 2,900 feet elevation on Log Mountain, near Middlesboro, September 19, 21, and 25; and Belfry, July 6. A young bird just from the nest was secured near Hickman on May 28.

Family SITTIDAE**SITTA CAROLINENSIS CAROLINENSIS Latham: White-breasted Nuthatch**

The two races of this nuthatch found in the eastern section of North America, the larger, paler *Sitta c. carolinensis* in the north and the smaller, darker *Sitta c. atkinsi* in the south, while sufficiently distinct when specimens from the northern and southern sections of the range are compared have a broad area in which there is transition between the two and in which the nuthatch population is definitely intermediate. The State of Kentucky is included in this intermediate area, thus making the allocation of specimens difficult and in part to be accomplished only through arbitrary decision. All the skins that I have seen from Kentucky are smaller than the average typical of the northern race. Some, however, are so distinctly pale colored that it seems best to place them with true *carolinensis*.

Birds that I have identified as *carolinensis* were taken as follows: Roundhill, Butler County, November 11; Mount Vernon, Rockcastle County, October 1, 4, and 6; 2,800 and 2,900 feet elevation on Log Mountain, 7 miles west of Middlesboro, September 17, 20, and 22; and 3,800 to 4,100 feet elevation on Black Mountain, 4 miles southeast of Lynch. It will be observed that these localities are in the eastern and northern sections of the State.

SITTA CAROLINENSIS ATKINSI Scott: Florida Nuthatch

As stated above the southern race of this nuthatch is distinguished by smaller average size and darker dorsal coloration. Further, there is no gray on the crown in the female, a condition found occasionally in the northern race. Male and female taken May 27 near the northern end of Reelfoot Lake, 5 miles southwest of Hickman, agree with specimens from across the border in Tennessee and seem fairly

typical of the southern race. There are in addition a number of specimens from various localities in the western third of the State and along the southern border as far east as Wayne County that, while dark, are intermediate in color and as they carry the character of smaller size seem best placed with *atkinsi*. The females seen have the crown black. Following are specimens in this category; Golden Pond, Trigg County, November 3; Canton, November 1; Sacramento, October 17; South Carrollton, October 18 and 26; Rock Haven, Meade County, April 25; Coopersville, Wayne County, June 6; and Rockybranch, Wayne County, June 8 and 14.

The specimen from Rock Haven is the most northeastern in this group. It is a male that is distinctly dark above with a wing measurement of 84.8 mm. The birds listed from Wayne County are small and dark. It would appear that the nuthatches of the western fourth or more of the State are to be placed with the southern race, which extends to the east along the Ohio River at the northern border at least to Meade County and along the southern boundary across to Wayne County.

Family CERTHIIDAE

CERTHIA FAMILIARIS AMERICANA Bonaparte: Brown Creeper

Found in migration, the first in fall being taken on October 17 near Sacramento. One was seen near South Carrollton the day following. One was taken at Canton on October 31 and others were collected at Brownsville on November 8. There is also a specimen in the National Museum taken at Lexington, November 30, 1898, by E. A. Mearns.

Family TROGLODYTIDAE

TROGLODYTES AËDON BALDWINI Oberholser: Ohio House Wren

An adult male taken 5 miles northeast of Quincy, Lewis County, July 11, belongs to this form. Birds observed at Belfry, Pike County, July 4, may also have been of the race.

TROGLODYTES AËDON PARKMANII Audubon: Western House Wren

Near Uniontown house wrens were common, three specimens being taken on May 10, evidently breeding birds. These birds, two males and a female, are of the western race, differing from the Ohio house wren in paler, more grayish coloration, especially below, and in the lighter, brighter brown of the flanks.

NANNUS TROGLODYTES HIEMALIS (Vieillot): Eastern Winter Wren

The winter wren was first seen in fall at 3,000 feet elevation on Log Mountain near Middlesboro on September 22, it being assumed that this was a migrant from the north. Specimens were taken at Morehead on October 8, Ghent on October 13, Madisonville on October 20, and Canton on November 1. There is a specimen in the National Museum collected at Bardstown on November 21, 1882, by C. W. Beckham.

THRYOMANES BEWICKII BEWICKII (Audubon): Bewick's Wren

Near Brandenburg two were taken on April 22, and others were seen here on April 28 and at Rock Haven on April 26. One was secured near Mount Vernon on October 4 and one near Burlington on October 11. They were found near Monticello on June 9 and 10 and near Madisonville on October 19, and one was collected at 2,800 feet elevation on Log Mountain, near Middlesboro, on September 26.

THRYOTHORUS LUDOVICIANUS LUDOVICIANUS (Latham): Carolina Wren

Of State-wide distribution, specimens being taken as follows: Near Hickman, May 24 and 25; Canton, October 31 and November 2; South Carrollton, October 27; Waverly, May 11; Brandenburg, April 20; Rock Haven, April 26; Roundhill, November 9; Ghent, October 13 and 14; Coopersville, June 6; Monticello, June 9 and 15; Mount Vernon, October 5; 2,600 and 2,800 feet elevation on Log Mountain, 7 miles west of Middlesboro, September 22 and 26; Belfry, Pike County, July 7. One was seen at an elevation of 4,000 feet on Black Mountain, near Lynch, on June 29.

TELMATODYTES PALUSTRIS PALUSTRIS (Wilson): Long-billed Marsh Wren

An immature male of the eastern race of this bird was taken 6 miles south of Berea on October 5. This bird agrees in color of flanks with specimens of the same season from near Washington, D. C.

TELMATODYTES PALUSTRIS ILIACUS Ridgway: Prairie Marsh Wren

Four specimens assigned to this form were obtained, two near South Carrollton on October 24, one 6 miles west of Burlington on October 10, and one near Mount Vernon, Rockcastle County, on October 6. It will be noted that the eastern bird was taken in the same county as the one last mentioned. All specimens secured were obtained during the fall migration period, so that there is no indication available from them as to whether they breed in this area.

Todd⁴ has indicated that the proper name of the prairie marsh

⁴ Proc. Biol. Soc. Washington, 1937, pp. 23-24.

wren is *iliacus* Ridgway and not *dissaëptus* of Bangs⁵ as given in the fourth edition of the A. O. U. Check-list.

CISTOTHORUS STELLARIS (Naumann): Short-billed Marsh Wren

The only ones seen were observed during the fall migration, when specimens were obtained near South Carrollton on October 18 and 24, at Canton on October 31, and 6 miles west of Burlington on October 11.

Family MIMIDAE

MIMUS POLYGLOTTOS POLYGLOTTOS (Linnaeus): Eastern Mockingbird

Three specimens of the mockingbird were obtained as follows: Canton, October 29; Madisonville, October 20; and Roundhill, November 12. The species was observed but not taken at Brandenburg, April 20 to 22; Rock Haven, April 26; Uniontown, May 10; Rockybranch, June 13; Monticello, June 15 and 16; and Middlesboro, September 23.

DUMETELLA CAROLINENSIS (Linnaeus): Catbird

The catbird was collected as follows: Uniontown, May 5; Brandenburg, April 30 and May 3; Monticello, June 10; Mount Vernon, October 6; Middlesboro, September 28; 3,800 and 3,900 feet elevation on Black Mountain, near Lynch, June 23 and 24; and Quincy, July 11. In spring the first one was seen 6 miles northwest of Brandenburg on April 21. In fall the last was recorded near Mount Vernon on October 6.

TOXOSTOMA RUFUM RUFUM (Linnaeus): Eastern Brown Thrasher

Specimens were collected as follows: Uniontown, May 10; Waverly, May 12; Brandenburg, April 29; Monticello, June 14; 2,300 feet elevation on Pine Mountain, near Whitesburg, June 29; and Quincy, July 12. These all agree in measurements with the eastern race. For discussion of the eastern and western races of this bird the reader is referred to the Proceedings of the United States National Museum, vol. 86, 1939, pp. 214 to 215.

Family TURDIDAE

TURDUS MIGRATORIUS MIGRATORIUS Linnaeus: Eastern Robin

As most of the robins secured were obtained during the period of migration the status of the breeding birds of Kentucky cannot be definitely outlined. An adult male from 4 miles west of Stearns, McCreary County, shot on June 16, is somewhat intermediate toward

⁵ *Cistothorus (Telmatodytes) palustris dissaëptus* Bangs, Auk, 1902, p. 352 (Wayland, Mass.).

achrusterus, having a wing measurement of 127.4 mm. and the color of the lower surface slightly paler than typical *migratorius* (though above it is dark). Two skins in spotted juvenal plumage, fully grown, from Quincy, July 12, have the long wing of the northern race.

The following skins were taken when northern migrants may have been present: South Carrollton, October 22; Golden Pond, November 3; Canton, October 31; Brandenburg, April 29 (a pair of fully typical northern birds, possibly breeding); Brownsville, November 10; Ghent, October 14; Berea, October 6.

TURDUS MIGRATORIUS ACHRUSTERUS (Batchelder): Southern Robin

An adult female shot at 4,100 feet elevation on Black Mountain, 4 miles southeast of Lynch, June 21, has the wing 120.7 mm. and the coloration very pale, being typical of the southern form. This should be the bird that nests along the southern border of Kentucky, but this can be ascertained only by further collecting.

It may be noted that an adult male from 9 miles east of Williamson, W. Va., collected on July 8, 1938, is typical *achrusterus*.

HYLOCICHLA MUSTELINA (Gmelin): Wood Thrush

The wood thrush, distributed in summer throughout Kentucky, was obtained as follows: Uniontown, May 13; Brandenburg, April 28 and May 2; Rock Haven, April 26; Log Mountain, near Middlesboro, September 23; 4,100 feet elevation on Black Mountain near Lynch, June 21; Belfry, Pike County, July 4 and 9 (the last an immature bird not quite grown); and Quincy, July 12.

HYLOCICHLA GUTTATA FAXONI Bangs and Penard: Eastern Hermit Thrush

Specimens were taken as follows: Madisonville, October 25; Brownsville, November 8; Roundhill, November 9; Ghent, October 12 and 14; Morehead, October 8.

HYLOCICHLA USTULATA SWAINSONI (Tschudi): Eastern Olive-backed Thrush

Two were taken in fall migration at 2,800 and 2,900 feet elevation on Log Mountain, 7 miles west of Middlesboro, on September 17 and 19.

HYLOCICHLA USTULATA ALMAE Oberholser: Western Olive-backed Thrush

That this form, described originally from the Great Basin, is truly distinct has been indicated recently by van Rossem⁶ and by Oberholser⁷ on the basis of more grayish, less brownish dorsal coloration. As a migrant this bird occurs casually to the eastward, and it is of

⁶ Field Mus. Nat. Hist. Publ., Zool. Ser., vol. 23, 1938, p. 457.

⁷ Louisiana Dept. Cons. Bull. 28, 1938, p. 472.

interest to record the following specimens in the present collection: Uniontown, May 10, male and female; 6 miles northwest of Brandenburg, May 3, adult female; 2,800 feet elevation on Log Mountain, 7 miles west of Middlesboro, September 17, adult male and immature female.

HYLOCICHLA MINIMA MINIMA (Lafresnaye): Gray-checked Thrush

The four specimens obtained were collected at Mount Vernon on October 1 and 3 and on Log Mountain, near Middlesboro, on September 25 and 28. These birds, all males, are representative of the larger, northern form of this bird as indicated by their wing measurements, which are 98.5, 99.8, 102.5, and 102.9 mm.

According to recent studies by George J. Wallace⁸ the type specimen of Lafresnaye's *Turdus minimus* instead of being the smaller Bicknell's thrush as identified some years ago by Bangs and Penard (whose statement was accepted for the fourth edition of the A. O. U. Check-list) is in reality the larger, northern bird currently recognized in the check-list as *H. m. aliciae*. Lafresnaye's type, according to Wallace, has a wing measurement of 99 mm., which places it clearly with the larger bird, an opinion with which J. L. Peters (in litt.) agrees. Under these circumstances therefore the gray-checked thrush is to be known as *Hylocichla minima minima*.

HYLOCICHLA FUSCESCENS FUSCESCENS (Stephens): Veery

On Black Mountain, Harlan County, the veery is a common breeding bird at elevations ranging from 3,800 to 4,100 feet. Four specimens were secured here on June 21, 23, and 30.

HYLOCICHLA FUSCESCENS SALICICOLA Ridgway: Willow Thrush

An adult male of the willow thrush, differing from the veery in darker dorsal color and darker spots on the breast, was taken in migration near Uniontown on May 10.

SIALIA SIALIS SIALIS (Linnaeus): Eastern Bluebird

Distributed widely, specimens were obtained as follows: In the isolated sector of Fulton County, south of New Madrid, Mo., separated by a loop of the Mississippi from the rest of Kentucky, June 1; Canton, November 2; South Carrollton, October 18; Waverly, May 12; Brandenburg, April 22 and 29; Roundhill, November 11; Brownsville, November 8; Burlington, October 11; Mount Vernon, October 3; Quincy, July 11. Young in spotted plumage, recently from the nest, were secured at Waverly on May 12 and at 4,150 feet on Black Mountain near Lynch on June 30.

⁸ Bicknell's thrush, its taxonomy, distribution, and life history. Proc. Boston Soc. Nat. Hist., vol. 41, No. 6, Jan. 1939, pp. 238-242.

Family SYLVIIDAE

POLIOPTILA CAERULEA CAERULEA (Linnaeus): Blue-gray Gnatcatcher

These slender little birds are most evident in spring and at the beginning of summer, when they are singing and nesting. Later in the season, when they are more quiet and the leaves are fully developed in the trees, they are observed ordinarily only by chance. Two were collected at Brandenburg on April 21 and 22, and others were seen at Rock Haven on April 26. Another was shot at Coopersville, Wayne County, June 6.

CORTHYLIO CALENDULA CALENDULA (Linnaeus): Eastern Ruby-crowned Kinglet

In spring these birds were taken at Rock Haven on April 26, Brandenburg on April 30, and Waverly on May 16, the last mentioned being an adult female. There is also a specimen collected at Wickland, near Bardstown, April 10, 1882, by C. W. Beckham. The first arrival in fall was secured at 2,800 feet elevation on Log Mountain, near Middlesboro, September 27. Others were shot at Burlington on October 11, South Carrollton on October 18, and Roundhill on November 7.

REGULUS SATRAPA SATRAPA Lichtenstein: Eastern Golden-crowned Kinglet

This handsome little bird was obtained only during fall, the first one being seen at Mount Vernon, Rockcastle County, on October 1. Two days later ten were seen and one was taken. Others were secured at Madisonville on October 24, Canton on November 2, and Brownsville on November 8. An adult male was shot at Lexington, November 17, 1898, by E. A. Mearns.

Family MOTACILLIDAE

ANTHUS SPINOLETTA RUBESCENS (Tunstall): American Pipit

Near Cadiz, Trigg County, two flocks were recorded on November 4, and two specimens were taken.

Family BOMBYCILLIDAE

BOMBYCILLA CEDRORUM Vieillot: Cedar Waxwing

On Black Mountain, southeast of Lynch, Harlan County, the cedar waxwing was fairly common from 3,900 to 4,100 feet, an adult female being taken June 25. Elsewhere waxwings were seen at Brandenburg on April 22 and at Rock Haven on April 25. In fall they were recorded on Log Mountain, near Middlesboro, on September 19 and 22, and specimens were taken at Mount Vernon on October 5, Canton on October 29, and Brownsville on November 12. There is also a speci-

men in the collection from Bardstown, shot on October 22, 1881, by C. W. Beckham. An adult male from Brownsville has red tips on three of the rectrices.

Family LANIIDAE

LANIUS LUDOVICIANUS MIGRANS Palmer: Migrant Shrike

The five specimens at hand, all taken in fall, come from the following localities: Sacramento, October 25; Princeton, November 5; Brownsville, November 12; and Lexington, November 21, 1898 (collected by E. A. Mearns).

Family STURNIDAE

STURNUS VULGARIS VULGARIS Linnaeus: Starling

The aggressive starling was taken at Uniontown on May 10 (young in juvenal plumage) and 13, Brandenburg on April 29, and Monticello on June 4. A flock was seen near Middlesboro on September 29.

Family VIREONIDAE

VIREO GRISEUS GRISEUS (Boddaert): White-eyed Vireo

Specimens were obtained as follows: Hickman, May 25 and 26; Waverly, May 9; Brandenburg, April 22 and 30; Monticello, June 10 and 11; Mount Vernon, October 4; and Middlesboro, September 19. A young bird just from the nest was taken near Hickman on May 25 and another a little older but still in juvenal plumage at Quincy on July 11.

There have been three recent proposals with regard to geographic races in this species in that part of its range included in the Eastern United States. Ridgway⁹ recognized two subspecies, one from the Florida Keys and the coast district of the Florida Peninsula north to Tarpen Springs and Anastasia Island, and another ranging as a breeding bird throughout the Eastern United States to the northward west to the Great Plains. Todd¹⁰ considered that the southern race extended from southern Florida north to South Carolina and through the Gulf States to Louisiana, with the northern form ranging elsewhere to the northward. Oberholser¹¹ recognized three forms, including the two proposed by Todd, with the addition that he differentiates also the one from extreme southern Florida accepted by Ridgway.

On examination of considerable material it is my conclusion that the treatment proposed by Mr. Ridgway is the one that is most logical.

⁹ U. S. Nat. Mus. Bull. 50, pt. 3, 1904, pp. 183-186.

¹⁰ Wilson Bull., 1926, pp. 222-223.

¹¹ Louisiana Dept. Cons. Bull. 28, 1938, pp. 502-503.

The Key West vireo, *Vireo griseus maynardi* Brewster, differs from the bird of the north in grayer dorsal color, in paler and more restricted yellow on sides and flanks, and in slightly larger bill. Breeding specimens from northern Florida and the Gulf States to Louisiana and north to South Carolina in series average very slightly duller yellow on the sides and flanks than those from farther north. The difference is slight and is appreciable only in part of the specimens I have seen, about one-half of those examined being identical from the two areas. In view of the slight amount of the difference and of its variation it does not seem to be practicable to recognize two races in this northern area, so that all the birds of the Eastern United States north of southern Florida should in my opinion be called *Vireo griseus griseus*. The duller birds of the south merely represent intergrades toward the duller colored race *maynardi* of extreme southern Florida.

VIREO FLAVIFRONS Vieillot: Yellow-throated Vireo

Specimens were obtained during the breeding season at Hickman on May 21, Rockybranch on June 13, and Monticello on June 14. Several were found during the fall migration on the slopes of Log Mountain on September 20, 24, and 25.

VIREO SOLITARIUS SOLITARIUS (Wilson): Blue-headed Vireo

One was shot near Morehead on October 8 and another near Sacramento on October 17. These are the only records made pertaining to the northern race of this bird.

VIREO SOLITARIUS ALTICOLA Brewster: Mountain Vireo

On Black Mountain, 4 miles southeast of Lynch, the mountain vireo was common above 3,800 feet, so that six specimens were collected between June 23 and 28. These all have the dark dorsal coloration and longer wing of this southern form. On Log Mountain, 7 miles west of Middlesboro, we found two on September 24, and later Perrygo collected another on September 27. These three birds are still in partial molt on the head and body and are believed to be representative of the nesting birds of this area. The range of this form in Kentucky is necessarily decidedly limited.

VIREO OLIVACEUS (Linnaeus): Red-eyed Vireo

Common and widely distributed, specimens of the red-eyed vireo were collected as follows: Hickman, May 20; Uniontown, May 10; Waverly, May 11; Brandenburg, April 20 and 27; Coopersville, June 3; Rocky Branch, June 7; Log Mountain, near Middlesboro, September 17 and 20; Belfry, Pike County, July 4 and 6; 4,000 feet elevation on Black Mountain, near Lynch, June 27; Quincy, July 12. In fall the last one was recorded near Mount Vernon on October 5.

There are a considerable number of vireos of the general color pattern of the red-eye distributed widely in the warmer portions of the New World that it has been proposed to treat as geographic races of one species. Though it may develop that this is true, it is my own feeling that the evidence is not as yet conclusive, so that for the present I prefer to recognize *olivaceus* as a species distinct from the others. The question is one that is complicated by the fact that even the forms that breed in the West Indies, Mexico, and Central America are migratory, retiring to the south after nesting, so that the actual breeding ranges of some yet remain to be definitely ascertained.

Family COMPSOTHTYPIDAE

MNIOTILTA VARIA (Linnaeus): Black and White Warbler

Specimens were obtained as follows: Brandenburg, April 28; Coopersville, June 6 (adult and one young fully grown); Rockybranch, June 8; Bardstown, May 9, 1885 (taken by C. W. Beckham); Mount Vernon, October 1; Log Mountain, near Middlesboro, September 24; 4,000 feet elevation on Black Mountain, near Lynch, June 29 (adult and fully grown young). The last one seen in fall was recorded at Mount Vernon on October 3.

PROTONOTARIA CITREA (Boddaert): Prothonotary Warbler

In the northwestern section of the State one was taken 3 miles east of Waverly on May 9. Near Uniontown the birds seemed fairly common, as three were seen and one was collected on May 13. In the cypress swamps 4 miles southwest of Hickman specimens were shot on May 20 and 27, including one young bird just from the nest in the curious, grayish, juvenile plumage.

HELMITHEROS VERMIVORUS (Gmelin): Worm-eating Warbler

An immature male was taken at 2,000 feet elevation on Log Mountain, 8 miles west of Middlesboro, on September 27.

VERMIVORA PEREGRINA (Wilson): Tennessee Warbler

In the spring migration specimens were shot near Waverly on May 6 and near Uniontown on May 10. In fall they were common over the slopes of Log Mountain from September 19 to 23 (specimens taken on each of these dates), and one was collected at South Carrollton on October 26. At Bardstown, Nelson County, specimens were taken on September 13 and 15, 1880, and September 18, 1885, by C. W. Beckham.

VERMIVORA RUFICAPILLA RUFICAPILLA (Wilson): Nashville Warbler

An adult male was shot a mile east of Waverly on May 11. An older record is that of a male taken at Bardstown on April 28, 1877, by C. W. Beckham.

COMPSOTHTLYPIS AMERICANA PUSILLA (Wilson): Northern Parula Warbler

The only one taken is an adult male shot on May 31 near the northern arm of Reelfoot Lake, 4 miles southwest of Hickman. This bird is dark above with a broad black band extending across the upper breast. In size it is small as the wing measures only 55.6 mm. This specimen is one of those small, richly colored birds of the type that led to the separation of the Mississippi Valley group in this species as the race *ramalinae*. It seems to me at present too difficult to differentiate except for occasional individuals to allow its separation from *pusilla*.

DENDROICA AESTIVA AESTIVA (Gmelin): Eastern Yellow Warbler

An adult female was collected 7 miles east of Monticello on June 9. One was taken at Bardstown on April 23, 1877, by C. W. Beckham.

DENDROICA MAGNOLIA (Wilson): Magnolia Warbler

Recorded as follows: Uniontown, May 17; Hickman, May 25; and Log Mountain, west of Middlesboro, September 19, 22, and 25.

DENDROICA CAERULESCENS CAERULESCENS (Gmelin): Black-throated Blue Warbler

An adult male was taken at Waverly on May 11. A female shot on Log Mountain, west of Middlesboro, September 22, is also of the northern race as indicated by its paler dorsal coloration.

DENDROICA CAERULESCENS CAIRNSI Coues: Cairns's Warbler

An excellent series of four males and three females taken at elevations ranging from 3,800 to 4,100 feet on Black Mountain, near Lynch, June 20 to 24, show that this is the breeding form from this mountain area. There is also an adult male in the collection from 2,000 feet elevation on Log Mountain, 7 miles west of Middlesboro, collected on September 25. This last bird has no black in the back but is marked by the deep hue of the blue.

DENDROICA CORONATA CORONATA (Linnaeus): Myrtle Warbler

Records for this migrant species are as follows: Brandenburg, April 21 and 22; Burlington, October 11; Madisonville, October 24; South Carrollton, October 24; Canton, October 29; Brownsville, November 8 and 12.

DENDROICA VIRENS VIRENS (Gmelin): Black-throated Green Warbler

Two adult males were taken near Waverly on May 17. In fall specimens were obtained on Log Mountain on September 24 and 28, near Mount Vernon on October 1, and 9 miles northeast of Madisonville on October 24. One was collected at Bardstown on September 16, 1885, by C. W. Beckham.

It was unexpected to secure an adult male 2 miles east of Rockybranch in Wayne County on June 7 and to see others here on June 13 and 14, as well as at a point 7 miles east of Monticello on June 9. Apparently the species nests fairly commonly in this region, which is an extension of the breeding range previously known. The elevation is relatively low. The bird also breeds on Pine Mountain in Letcher County, as an adult male was shot there at 2,300 feet elevation, 4 miles southeast of Whitesburg, June 29.

DENDROICA CERULEA (Wilson): Cerulean Warbler

The first one was seen at Rock Haven, Meade County, on April 26, and a male was taken near Brandenburg on May 2. In Wayne County those birds were common, specimens coming from Rockybranch on June 8 and east of Monticello on June 9 and 10. One was collected at Bardstown, Nelson County, April 13, 1877, by C. W. Beckham. The males in this small series show the usual variation in the breast band from a broad heavily marked collar of mixed slaty black and light blue to a narrow, interrupted line that crosses the white of the upper breast like a necklace.

DENDROICA FUSCA (Müller): Blackburnian Warbler

That the Blackburnian warbler breeds on Black Mountain, near Lynch, is shown by an adult male collected at 4,000 feet on June 23. One was taken at Bardstown on September 11, 1885, by C. W. Beckham.

DENDROICA DOMINICA DOMINICA (Linnaeus): Yellow-throated Warbler

An adult male from Bardstown, Nelson County, taken on April 19, 1877, by C. W. Beckham belongs to the typical race and is to be considered a straggler. The lores are yellow, the white area on the rectrices is extensive, and the culmen from base measures 13.5 mm.

DENDROICA DOMINICA ALBILORA Ridgway: Sycamore Warbler

An adult female was collected 3 miles east of Waverly on May 7. The lores in this bird are entirely white, and the culmen from base measures 15.3 mm.

DENDROICA PENNSYLVANICA (Linnaeus): Chestnut-sided Warbler

On Black Mountain, near Lynch, this warbler was common so that several were collected from June 21 to 23 at around 4,000 feet elevation. Others were taken on Log Mountain, near Middlesboro, on September 19 and 22, and there is a specimen in the collection shot at Bardstown on May 2, 1885, by C. W. Beckham.

DENDROICA CASTANEA (Wilson): Bay-breasted Warbler

Over the higher slopes of Log Mountain, near Middlesboro, these birds were abundant from September 19 to 22, three being taken. There is also one collected on September 15, 1880, at Bardstown by C. W. Beckham.

DENDROICA STRIATA (Forster): Black-poll Warbler

The black-poll was seen at Uniontown on May 13, and specimens were taken at Corydon on May 14 and Waverly on May 16. One was shot at Bardstown on May 8, 1882, by C. W. Beckham.

DENDROICA PINUS PINUS (Wilson): Northern Pine Warbler

An adult male was taken 3 miles south of Coopersville on June 6, and others were seen in the region east of Monticello on June 9 and 10.

DENDROICA DISCOLOR DISCOLOR (Linnaeus): Northern Prairie Warbler

The first arrivals from the south were recorded 5 miles northwest of Brandenburg on April 22, when male and female were taken. Males were shot subsequently at Monticello on June 15 and near Stearns on June 16. In fall one was collected near Middlesboro on September 28. There is also a specimen in the Museum from Bardstown taken on April 26, 1882, by C. W. Beckham.

DENDROICA PALMARUM PALMARUM (Gmelin): Western Palm Warbler

In spring the bird was noted only at Waverly, where a female was shot on May 6. In fall three specimens were taken on Log Mountain, west of Middlesboro, at elevations of 2,800 to 2,900 feet on September 21 and 22, and one near the town of Middlesboro on September 29. Subsequently, two were secured 6 miles west of Burlington on October 10.

SEIURUS AUROCAPILLUS (Linnaeus): Ovenbird

The present species was collected during the breeding season at Coopersville on June 6, Rocky Branch on June 7, and 4,000 feet elevation on Black Mountain, near Lynch, on June 28. From September 21 to 27 these birds were common over the slopes of Log Mountain, west of Middlesboro. There is also a specimen in the Museum from the Edward J. Brown collection taken at Louisville September 4, 1884, by William Palmer.

SEIURUS NOVEBORACENSIS NOVEBORACENSIS (Gmelin): Northern Water-thrush

An adult female taken at Uniontown on May 10 belongs to the eastern form as shown by its brownish dorsal color and small size (wing 69 mm.). A water-thrush of undetermined race was seen at Middlesboro on September 28.

SEIURUS NOVEBORACENSIS NOTABILIS (Ridgway): Grinnell's Water-thrush

On May 9 an adult male was shot 3 miles east of Waverly. This bird is typical of the western race in darker gray, less brownish dorsal coloration. The wing measures 75.1 mm.

SEIURUS MOTACILLA (Vieillot): Louisiana Water-thrush

Specimens were obtained at Rock Haven April 25, and 7 miles east of Monticello June 9. One was taken at Bardstown on April 23, 1877, by C. W. Beckham.

OPORORNIS FORMOSUS (Wilson): Kentucky Warbler

This handsome bird, named for the State from which these specimens come, was taken at Hickman on May 24 and 30 and near Monticello on June 9 and 15.

GEOTHLYPIS TRICHAS BRACHIDACTYLA (Swainson): Northern Yellow-throat

The first bird of the season was a male from 4 miles southeast of Brandenburg shot on April 27. Specimens collected at Waverly on May 6 and 7 and Uniontown on May 10 may have been summer residents or migrants. A male and two females from near the northern arm of Reelfoot Lake taken on May 20, 21, and 25 are to be considered breeding birds, as are specimens from Monticello, June 15, 3,900 to 4,100 feet elevation on Black Mountain, near Lynch, June 23, 24 and 30, and 5 miles northeast of Quincy, July 11 and 12. The last mentioned include a juvenile bird not quite grown. Males in this series have wing measurements ranging from 52.2 to 55.8 mm., all but 4 being more than 54 mm. All have a definite spread of yellow across the lower breast and abdomen, and all are bright green above.

In fall birds were taken at 2,800 feet on Log Mountain, near Middlesboro, on September 21, at Mount Vernon on October 4, and at South Carrollton on October 22. These are definitely yellow below.

All the birds seen from the State are referred to the race *brachidactyla* as understood at present.

ICTERIA VIRENS VIRENS (Linnaeus): Yellow-breasted Chat

Specimens were obtained as follows: Near Hickman, May 20 and 24; Waverly, May 7 and 9; 3,900 to 4,100 feet elevation on Black Mountain, near Lynch, June 23, 24, and 29; and Belfry, Pike County, July 4.

Two males from 4 miles southwest of Hickman, Fulton County, agree with specimens from near Reelfoot Lake in Tennessee in having the white of the malar region slightly more extensive than those seen from elsewhere in Kentucky and Tennessee. A male taken

near Waverly (U. S. N. M. No. 337821) has a white mark on the posterior part of the superciliary region and extensive yellow markings on the scapulars and greater wing coverts. Curiously enough, I saw a yellow-breasted chat with similar markings, but with the white on the head much more extensive, several times about our camp at Tres Zapotes, southern Veracruz, Mexico, in March and early in April 1939.

WILSONIA CITRINA (Boddaert): Hooded Warbler

The first one of the season was seen at Rock Haven, Meade County, April 26. Specimens were taken at Hickman on May 30, at 3,800 feet elevation on Black Mountain, near Lynch, on June 22, and on Log Mountain, near Middlesboro, on September 21 and 22.

WILSONIA PUSILLA PUSILLA (Wilson): Wilson's Warbler

An adult male taken on May 16 comes from 3 miles east of Waverly, in Union County.

WILSONIA CANADENSIS (Linnaeus): Canada Warbler

On the summit of Black Mountain, near Lynch, the Canada warbler was fairly common. The three specimens obtained were taken at 3,800 and 3,900 feet elevation on June 20, 23, and 24. The last mentioned is a juvenile bird barely grown.

SETOPHAGA RUTICILLA (Linnaeus): Redstart

Specimens were taken at the following places: Hickman, May 20 and 27; Waverly, May 6 and 9; Uniontown, May 13; Monticello, June 9; Bardstown, April 24, 1877 (collected by C. W. Beckham); Mount Vernon, October 1; Log Mountain, near Middlesboro, September 23; 4,100 feet elevation on Black Mountain, near Lynch, June 21; and Quincy, July 11.

Oberholser¹² has recognized a western race of the redstart, using for it the name *tricolora* of Müller and stating that "this western race differs from the eastern form in smaller size, smaller orange or yellow wing-spot; in the female also in paler, more grayish, less conspicuously olivaceous, upper surface."

To check this I have examined a large series of redstarts from the entire breeding range of the species, and so far as I can determine there are no definite characters that will allow the segregation of two subspecies. Measurements of males taken from birds on or near their breeding grounds from east and west are as follows (averages given in parentheses):

¹² Louisiana Dept. Cons. Bull. 28, 1938, pp. 572-573.

Twenty-eight specimens from Newfoundland, Nova Scotia, Massachusetts, New York, and Pennsylvania, wing 62.7–66.9 (65.0), tail 52.4–58.4 (55.4), culmen from base 10.2–12.6 (11.1), tarsus 16.0–18.1 (17.6) mm.

Eighteen specimens from Mackenzie, Athabaska, Alberta, Washington, Montana, and South Dakota, wing 61.5–65.1 (63.6), tail 53.5–59.2 (56.5), culmen from base 10.0–11.9 (10.4), tarsus 15.8–18.0 (17.0) mm.

With length of wing taken for a criterion, it may be noted that while the smallest bird comes from the west (being a specimen taken on Slave River, Athabaska, 10 miles below Peace River, June 15, 1901) the difference between it and the smallest eastern bird measured (a male from Locust Grove, Pa., taken on June 27, 1895) is only 1.2 mm., while the largest eastern bird exceeds the largest western skin by only 1.8 mm. Though the western series averages very slightly smaller, this difference for the two groups is only 1.4 mm. It is obvious that there is so much overlap that the identification of specimens on the basis of larger or smaller size, except for a very few specimens, can only be by arbitrary decision.

With regard to the wing spot, the basal portion of the secondaries, except the innermost, and of the primaries, except the outermost, is orange in the adult male and yellow in the female and immature male. The wing spot is most prominent in the male as it averages larger than in the female, in addition to being brighter colored. The extent to which this orange is exposed is governed by the amount of coverage by the overlying greater coverts and primary coverts. In examining a considerable series of birds I find much variation in the apparent size of this wing spot but cannot correlate this variation with definite geographic area. It appears to me that one factor in the apparent size of this wing spot is due to the method used by the collector in preparing specimens. Many follow the practice—one that to me has always seemed pernicious and that I have never followed—of loosening the secondaries from the ulna in cleaning the flesh from the wing. In the finished specimen this may easily change the relation between the secondaries and the coverts overlying their bases, and in the case of these redstarts may modify the apparent size of the exposed section of orange color that constitutes the wing spots.

Finally I am not able to detect differences in dorsal color in females from the eastern and western areas.

Family ICTERIDAE

STURNELLA MAGNA MAGNA (Linnaeus) : Eastern Meadowlark

The meadowlarks of Kentucky offer some difficulty in identification since in the south and west there are birds intermediate between the

eastern and the southern forms, the latter ranging into the southwestern section of the State. In a pair from Corydon, Henderson County, taken on May 14, the wing in the male is 123.5 mm. and in the female 109.8 mm. They are rather deep yellow below, in this seeming slightly intermediate toward the southern form, and are a little dark above. While slightly intermediate they belong with the northern bird. An adult male from Brandenburg, taken on April 30, with the wing 122.4 mm., is similar to them, as is a male taken at Bardstown, April 14, 1877, by C. W. Beckham, which has the wing 120 mm. Two fall males, shot 11 miles south of Brownsville on November 11, which measure 118.4 and 118.9 mm., are also rather bright below, though lighter above. A breeding male collected 4 miles east of Monticello on June 16, with the wing 117.3, is definitely intermediate in its brighter breast and is placed somewhat arbitrarily with *magna*. More material is desirable from this area to settle the status of its breeding birds. A female from Mount Vernon, secured on October 5, is light in color and has the wing 105.3 mm. An adult female from Middlesboro, September 29, measures 106.9 mm. A juvenile bird just from the nest was collected at Fullerton, Greenup County, on July 13.

STURNELLA MAGNA ARGUTULA Bangs: Southern Meadowlark

This race of meadowlark, distinguished by small size, brighter yellow below, and darker hue above, is found in southwestern Kentucky. An adult male shot on June 1 on the banks of the Mississippi, in the small section of Fulton County that lies in a loop of the river south of New Madrid, Mo., is distinctly bright yellow below and dark above and has the wing 112 mm. Another male taken on May 30 about 4 miles southwest of Hickman, with the wing measuring 116.8, is even darker above and brighter below. Fall specimens include two males from Trigg County that also are identified as the southern race. One from Canton, November 2, measures 116.8, and one from 5 miles northeast of Golden Pond, November 3, has the wing 115.3. The color in these two is deep. Two males obtained 9 miles northeast of Madisonville on October 21, which measure 116 and 116.8 mm., also belong in this series. The limit of the ranges between the two forms in southwestern Kentucky thus is indicated, though further collecting is necessary to determine the northern limit of the race *argutula*.

AGELAIUS PHOENICEUS PHOENICEUS (Linnaeus): Eastern Red-wing

A fair series obtained both in the breeding season and in the time of fall migration contains only specimens of this form. Records are as follows: 4 miles southwest of Hickman, near the northern ex-

tremity of Reelfoot Lake, May 23 and 24; Waverly, May 11 and 12 (the last a male in the immature stage where the epaulets are almost wholly black); Roundhill, November 12; Rock Haven, April 25; Ghent, October 13; Burlington, October 13; Berea, October 4; and Quincy, July 13.

ICTERUS SPURIUS (Linnaeus): Orchard Oriole

An adult male was taken 4 miles west of Stearns on June 16.

EUPHAGUS CAROLINUS (Müller): Rusty Blackbird

A male comes from Roundhill, Butler County, November 11.

QUISCALUS VERSICOLOR Vieillot: Bronzed Grackle

Specimens were obtained as follows: Hickman, May 31; Waverly, May 12; Roundhill, November 11 and 12; and Quincy, July 13 (including one juvenile bird fully grown).

These are all typical of the bronzed grackle as would be expected from the area covered. Elsewhere¹³ I have indicated my reasons for considering this bird as specifically distinct from the purple grackles of more eastern range, and for using the name *versicolor* Vieillot instead of *aeneas* Ridgway. My good friend Dr. Frank M. Chapman¹⁴ has objected to this on the ground that the specimen in the Paris Museum may not be the actual type of Vieillot's description. While I hesitate to disagree, especially since Dr. Chapman has devoted so much careful study to these grackles, I find it necessary after a second review of the question to hold to my former statement.¹⁵

MOLOTHRUS ATER ATER (Boddaert): Eastern Cowbird

The wide distribution of the cowbird during the nesting season is indicated by the following records: On the Mississippi River in extreme western Fulton County, in the area cut off from the rest of the State and south of New Madrid, Mo., June 1; Waverly, May 7; Rock Haven, April 26; Belfry, July 5 (immature); Quincy, July 12 (immature); and Fullerton, July 13. The last is an immature male molting into first fall plumage.

Family **THRAUPIDAE**

PIRANGA ERYTHROMELAS Vieillot: Scarlet Tanager

The first scarlet tanagers of the spring were seen near Brandenburg on April 21. Specimens are at hand from Uniontown, May 13;

¹³ Proc. U. S. Nat. Mus., vol. 86, 1939, pp. 230-231.

¹⁴ Auk, 1939, pp. 364-365.

¹⁵ See Auk, 1939, pp. 505-506.

Bardstown, May 7, 1881 (taken by C. W. Beckham); 4,100 feet elevation on Black Mountain, 4 miles southeast of Lynch, June 21; and 2,800 feet elevation on Log Mountain, 7 miles west of Middlesboro, September 17.

PIRANGA RUBRA RUBRA (Linnaeus): Summer Tanager

Specimens were taken at the following localities: Near Hickman, May 26; Brandenburg, May 3; Coopersville, June 6; Bardstown, May 7, 1877 (shot by C. W. Beckham); and Belfry, July 8. They were seen on Log Mountain, west of Middlesboro, on September 21, and near Mount Vernon on October 1.

Family FRINGILLIDAE

RICHMONDENA CARDINALIS CARDINALIS (Linnaeus): Eastern Cardinal

The cardinal was recorded in all localities visited except on the higher elevations of Black Mountain in Harlan County. Specimens were obtained as follows: Hickman, May 20 and 24; Golden Pond, November 3; Canton, October 29; Uniontown, May 5; Waverly, May 6; Madisonville, October 20; South Carrollton, October 18; Roundhill, November 11; Brandenburg, April 20; Rock Haven, April 26; Burlington, October 11; Rockybranch, June 8 (young bird recently from nest) and 14; Monticello, June 9; Mount Vernon, October 4; 2,000 feet elevation on Log Mountain, Bell County, September 27; Middlesboro, September 28; Belfry, July 4 (young bird recently from nest) and 5; and Quincy, July 11.

HEDYMELES LUDOVICIANUS (Linnaeus): Rose-breasted Grosbeak

In spring specimens were taken at Brandenburg on April 30 and at Uniontown on May 10. They were fairly common as breeding birds on the summit of Black Mountain, near Lynch, where a male was collected on June 21. Three were taken and others were seen on Log Mountain, west of Middlesboro, on September 19, 20, and 23, and the last of the season was secured at Mount Vernon on October 4.

PASSERINA CYANEA (Linnaeus): Indigo Bunting

In the summer season the indigo bunting is distributed throughout the State. Specimens were secured as follows: Hickman, May 27; Uniontown, May 5; Waverly, May 11; Brandenburg, April 29; Monticello, June 10; Coopersville, June 6; Mount Vernon, October 3 and 4; 2,300 feet elevation on Pine Mountain, near Whitesburg, June 29; Quincy, July 12.

SPIZA AMERICANA (Gmelin): Dickcissel

Throughout the open country of western Kentucky the dickcissel is one of the common summer residents seen constantly in travel along the roads. Specimens were obtained as follows: Hickman, May 20, 23, and 31; Waverly, May 6, 7, and 11; and Corydon, May 14.

CARPODACUS PURPUREUS PURPUREUS (Gmelin): Eastern Purple Finch

In fall the purple finch was found at Roundhill, Butler County, on November 7 and 12, two adult males and a female being taken. One was collected at Bardstown on April 11, 1877, by C. W. Beckham.

SPINUS PINUS PINUS (Wilson): Northern Pine Siskin

Two were taken on October 27 near South Carrollton. Later a flock was recorded on November 12 near Brownsville.

SPINUS TRISTIS TRISTIS (Linnaeus): Eastern Goldfinch

Near Brandenburg goldfinches in molt from winter to summer dress were taken April 23 and May 3. One from Waverly collected on May 6 is just completing this molt. Summer birds were taken at Monticello on June 10 and 15, at 3,800 feet elevation on Black Mountain on June 23, and near Quincy on July 12. A juvenile bird recently from the nest and an adult male in worn plumage were collected at 2,800 feet on Log Mountain, 7 miles west of Middleboro, on September 21, and other young birds in postjuvinal molt were secured at Burlington on October 11. Specimens in winter dress include one from South Carrollton, October 27; two from Roundhill, November 7; and one from Lexington, November 17, 1898 (taken by E. A. Mearns).

LOXIA CURVIROSTRA Linnaeus: Red Crossbill

There is in the National Museum an adult male red crossbill, taken at Bardstown in March 1883 by C. W. Beckham, that agrees with Ludlow Griscom's description of *Loxia curvirostra neogaea*.¹⁶ It is dull red in color and has the following measurements: Wing 91, tail 52.2, culmen from base 17.3, depth of bill 9.2, tarsus 16.5 mm.

PIPILO ERYTHROPHthalmus ERYTHROPHthalmus (Linnaeus): Red-eyed Towhee

Although two forms of towhee are found in Tennessee, the Alabama towhee (*Pipilo e. canaster*) ranging in the southeastern and eastern sections north to Shady Valley, the birds of Kentucky are all to be classed as the typical form. The only suggestion of the more south-

¹⁶ *Loxia curvirostra neogaea* Griscom, Proc. Boston Soc. Nat. Hist., vol. 41, Jan. 1937, pp. 93, 110 (Lake Umbagog, Maine).

ern race is found in three immature male birds taken on the summit of Log Mountain, all being in molt from juvenal to first fall plumage. In these the color of the flanks is very faintly paler than normal, indicating some faint trace of the influence of the more southern form.

Specimens were obtained as follows: Waverly, May 7 and 9; Canton, October 31; Madisonville, October 20; Roundhill, November 7; Brandenburg, April 22 and 23; Ghent, October 11; English, October 12; Mount Vernon, October 3; Morehead, October 8; 2,800 feet elevation on Log Mountain, 7 miles west of Middlesboro, September 17; 2,300 feet elevation on Pine Mountain, near Whitesburg, June 29 (juvenile); and 4,000 and 4,100 feet elevation on Black Mountain, near Lynch, June 21, 22, and 23.

PASSERCULUS SANDWICHENSIS SAVANNA (Wilson): Eastern Savannah Sparrow

The material recently collected from the eastern part of the Mississippi drainage, including birds from West Virginia, Tennessee, and Kentucky, has made it important to review the entire collection from the eastern United States in the National Museum in accordance with the new understanding of the geographic races of this interesting bird offered in the excellent study published recently by James L. Peters and Ludlow Griscom.¹⁷ The work has involved many days of careful consideration, and through a clearer understanding has changed a few of the identifications published in my recent studies on birds from West Virginia and Tennessee. In the present report therefore I have listed all this material again to bring the record down to date. As Peters and Griscom have indicated, identification of geographic races in this species, though highly interesting, is much involved, and requires careful comparison of series of specimens taken at the same season of the year. In the present investigation the entire lot of birds was assorted by months so that birds of exactly comparable stage of plumage could be examined together.

After going into the question with much care I am still of the opinion expressed earlier¹⁸ that the Ipswich sparrow is specifically distinct from the Savannah sparrows proper.

In modern application of trinomial nomenclature the tendency of some workers seems to be to replace the species concept with its division into geographic races with the "formenkreis" concept, and to use the latter as the unit in nomenclature, differentiating all its included forms by use of a third term in the scientific name. While

¹⁷ Geographical variation in the Savannah sparrow. Bull. Mus. Comp. Zool. vol. 80, Jan. 1938, pp. 445-478, 1 pl.

¹⁸ Wetmore, A., Proc. U. S. Nat. Mus., vol. 86, 1939, pp. 236-237.

in many cases the formenkreis and the species unit may coincide, in others the formenkreis may include units that are truly separate specific entities, as well as those that cover intergrading geographic races. It is only confusing and misleading to label distinct species with a trinomial in the same manner as very slightly differentiated subspecies. In some cases, in fact, the formenkreis may have the same value as the subgenus, from a nomenclatural standpoint. In the present case the Ipswich sparrow should continue to be listed as *Passerculus princeps*.

With the rest of the conclusions reached by Peters and Griscom with regard to eastern forms of the Savannah sparrow I am in accord, though I believe that the material available now indicates a slightly different understanding of the distribution of the far northern forms. Disregarding for the moment the very gray race *nevadensis*, which breeds from British Columbia, east of the Cascade Range, to Alberta, Saskatchewan, Manitoba, and eastward to Minnesota and southern Wisconsin, the two authors in question have recognized two very dark forms heavily marked with black. One of these, *oblitus* from the western side of Hudson Bay, has the dorsal surface, aside from the very black dark markings, distinctly gray. The other, *labradorius*, is as definitely brown. The race *labradorius* seems to have its maximum expression in deep brown color in birds that I have seen from Fort Chimo, in northern Ungava, while toward the southeast in Labrador and Newfoundland it begins to intergrade with the more southern form, *savanna*. This seems to indicate a wider breeding range for *labradorius* than previously supposed to the west of Labrador, from which area many of the very dark brown birds migrate southward into the Mississippi Valley. Here they mingle with the grayer dark birds *oblitus* that are migrant from areas farther west. This conception gives a more extended winter range to *labradorius*, as Peters and Griscom have reported this form in fall, winter, and spring mainly along the Atlantic seaboard.

The race *savanna* is marked by lighter-brown dorsal plumage, with the sides of the head paler, and the spots and streaks on the under surface somewhat reduced and in the main dark brown.

The following specimens from Kentucky are identified as *P. s. savanna*: Cerulean, November 5; Canton, November 2; Madisonville, October 24; South Carrollton, October 24, 25, and 27; Roundhill, November 12; Bardstown, March 3, 1882 (taken by C. W. Beckham); Berea, October 6; and Richmond, October 4.

West Virginia specimens are as follows: Big Burn, near Yokum Knob, Middle Mountain, July 4, 1936; 3,200 feet elevation on Flat Top Mountain, near Flat Top, October 15, 1936. (The remaining

specimen recorded originally as *savanna*¹⁹ proves now to be *labradorius*.)

Tennessee: Rockwood, March 18, 21, and 31, 1885, taken by A. H. Fox. (The birds recorded²⁰ as taken on April 7, 1885, by A. H. Fox prove to be *labradorius*, while the two reported from Bartlett, April 19, 1937, are *oblitus*. There is also a specimen of *oblitus* shot at Rockwood March 31, 1885, by A. H. Fox.)

PASSERCULUS SANDWICHENSIS LABRADORIUS Howe: Labrador Savannah Sparrow

This race is marked by very dark color, with heavier and more prominent black markings above, the feathers being bordered with darker brown, the sides of the head darker, the edgings of the remiges usually very rich dark brown, and the spots and streaks of the under surface abundant and usually deep black in color. Specimens from Kentucky include the following: 6 miles northwest of Brandenburg, May 3; Mount Vernon, October 3 and 6; Berea, October 6; South Carrollton, October 18 and 22; and Canton, November 1.

From West Virginia, in addition to the specimen taken November 2, 1936, at Mercers Bottom identified originally as *labradorius*, it now appears that another taken at this same place on October 29 belongs to this same race.

From Tennessee two skins from Rockwood collected on April 7, 1885, by A. H. Fox belong here, the form *labradorius* being an addition to the list of birds in my recent report on collections from that State.

While *Passerculus sandwichensis oblitus* Peters and Griscom is not represented in the present collection from Kentucky, it will undoubtedly be found there as a migrant.

PASSERCULUS SANDWICHENSIS NEVADENSIS Grinnell: Nevada Savannah Sparrow

This race is much paler gray above, with the black markings reduced above and below, the sides of the head paler, the yellow over the eye lighter and less in amount, and the bill usually more slender. Peters and Griscom have extended the breeding range of this well-marked form east to southern Wisconsin.

An immature male taken at South Carrollton on October 22 is entirely characteristic of this well-marked form.

Two were taken in Tennessee, at Ellendale on April 17 and at Bartlett on April 19, these having been recorded by me originally as *oblitus*. They now prove to be *nevadensis*.

¹⁹ Proc. U. S. Nat. Mus., vol. 84, 1937, p. 436.

²⁰ Proc. U. S. Nat. Mus., vol. 86, 1939, p. 236.

AMMODRAMUS SAVANNARUM AUSTRALIS Maynard: Eastern Grasshopper Sparrow

The first arrival in spring was recorded at Brandenburg on April 20, and on April 27 a male was taken 4 miles southeast of that town. A colony was located in June 4 miles east of Monticello, and two adult males and a young bird able to fly were obtained on June 11. Other males were collected 5 miles northeast of Quincy on July 11 and at Fullerton on July 12.

AMMODRAMUS SAVANNARUM BIMACULATUS Swainson: Western Grasshopper Sparrow

On April 30 an adult male of the western form of the grasshopper sparrow was taken 6 miles northwest of Brandenburg. As another secured 10 miles to the southeast is the eastern form, this bird must be a migrant enroute to some breeding ground to the northwest. Further studies should be made to determine whether the western race is regularly present in migration in western Kentucky.

PASSERHERBULUS CAUDACUTUS (Latham): LeConte's Sparrow

At dusk on October 24 a little over a mile west of South Carrollton a little flock of these birds flew into a growth of bush-clover (*Lespedeza*) in a lowland field. The three specimens taken constitute one of the interesting finds of the work of the fall season.

POOECETES GRAMINEUS GRAMINEUS (Gmelin): Eastern Vesper Sparrow

The vesper sparrow was seen at Brandenburg on April 20. In fall migration specimens were taken at Bedford on October 13, Golden Pond on November 3, and Cadiz on November 4.

CHONDESTES GRAMMACUS GRAMMACUS (Say): Eastern Lark Sparrow

The only lark sparrow from Kentucky available is a male taken at Wickland estate, near Bardstown, Nelson County, April 25, 1877, by C. W. Beckham.

AIMOPHILA AESTIVALIS BACHMANI (Audubon): Bachman's Sparrow

The only specimen obtained is a male shot 6 miles northwest of Brandenburg on April 21. This bird is identified as *bachmani* though it is somewhat intermediate toward the more western race, *illinoensis*.²¹

JUNCO HYEMALIS HYEMALIS (Linnaeus): Slate-colored Junco

This common winter resident and migrant was obtained as follows: Ghent, October 14; Madisonville, October 20; Canton, October 29 and 31; and Roundhill, November 7.

²¹ See Wetmore, A., Proc. U. S. Nat. Mus., vol. 86, 1939, p. 238.

JUNCO HYEMALIS CAROLINENSIS Brewster: Carolina Junco

Perrygo found this race of the junco fairly common at 3,800 feet and above on Black Mountain, near Lynch, and prepared six specimens on June 20, 21, 22, and 29. These have the more uniform gray color, with the head similar to the back, that marks this southern mountain subspecies. Measurements are as follows: Males (4 specimens), wing 76.8, 77.3, 79.4, 80.5, tail 64.3, 66, 66.3, 70.3, culmen from base 11.7, 12.5, 12.8, 13.2, tarsus 21.2, 22.4, 22.4, 22.7 mm. Females (2 specimens), wing 72.4, 73.6, tail 61.8, 63.8, culmen from base 12.3, 12.7, tarsus 21.3, 22 mm.

Whether this junco nests elsewhere along the eastern boundary of the State and its complete range within Kentucky should be ascertained.

SPIZELLA PASSERINA PASSERINA (Bechstein): Eastern Chipping Sparrow

Specimens were obtained as follows: Cadiz, November 4; Brandenburg, April 23 and 30; Bedford, October 13; Rockybranch, June 8 and 13; Monticello, June 16; and Middlesboro, September 28. One of the birds from Bedford collected on October 13, an immature male, is very much lighter above than the majority of eastern birds taken at the same season, offering thus a definite resemblance to *S. p. arizonae* in fall dress. On close examination, however, the Bedford bird is deeper buffy brown than the western form. I have seen a few other specimens from eastern localities that resemble it.

SPIZELLA PUSILLA PUSILLA (Wilson): Eastern Field Sparrow

The field sparrows of Kentucky are typical of the eastern form until the extreme western border of the State is reached. An adult female collected on June 1, in the segment of Fulton County separated from the rest of the State by a loop of the Mississippi River, is very slightly paler above, showing thus a faintly intermediate condition toward the western race, *arenacea*. One fully grown, in juvenal plumage, shows the same characteristics as the adult. Both, however, are to be classed as *pusilla*.

Other records are as follows: Waverly, May 7 and 9; Canton, October 31 and November 2; Madisonville, October 20 and 24; Brownsville, November 8; Brandenburg, April 20, 21, and 22; Burlington, October 11; Bedford, October 13 (partial albino); Ghent, October 14; Monticello, adult male June 11, juveniles June 10 and 15; Lexington, November 17, 1898 (taken by E. A. Mearns); Mount Vernon, October 3; Middlesboro, September 28; at 3,900 to 4,100 feet elevation on Black Mountain, near Lynch, June 22, 24 (juvenile), and 28; Belfry, July 6 (juveniles).

ZONOTRICHIA LEUCOPHRYS LEUCOPHRYS (Forster): White-crowned Sparrow

The records obtained for this interesting sparrow were all made in fall. The first seen were two immature females collected October 10 on the banks of the Ohio River 6 miles west of Burlington. Near Ghent on October 14 an adult female was shot and several others were seen. One was collected 9 miles northeast of Madisonville on October 21, and near Canton the birds were common from October 31 to November 2, one being taken on the last date mentioned.

ZONOTRICHIA ALBICOLLIS (Gmelin): White-throated Sparrow

In spring two males were collected near Brandenburg on April 20 and 21, the birds being common at the time. The first in fall was recorded at Mount Vernon on October 2. Specimens were taken at English on October 12, Madisonville on October 20, Canton on October 29 and November 2, and Brownsville on November 8. The birds were abundant at Roundhill on November 9.

PASSERELLA ILIACA ILIACA (Merrem): Eastern Fox Sparrow

Specimens of the fox sparrow were taken at South Carrollton on October 24, Cerulean on November 5, and Roundhill on November 7.

MELOSPIZA LINCOLNII LINCOLNII (Audubon): Lincoln's Sparrow

One was shot 2 miles north of Mount Vernon, Rockcastle County, on October 4.

MELOSPIZA GEORGIANA GEORGIANA (Latham): Eastern Swamp Sparrow

In his recent work on the birds of Louisiana Dr. Oberholser²² has separated a western race of the swamp sparrow, a proposal that appears to me valid after examination into it. The birds from the eastern part of the range of the species are darker above, with the brown more reddish, and the gray of the sides and hindneck darker. In fall plumage, when the colors are deeper in tone, distinctness in the shade of gray frequently disappears, but the darker color of the upper surface in general serves to separate birds of the east.

In the material from Kentucky the following are identified as the eastern race: Madisonville, October 24; Brandenburg, April 23; Round Hill, November 7; Burlington, October 7; Berea, October 5; and Mount Vernon, October 5 and 6.

In view of this recognition of two forms I have examined the specimens secured in West Virginia in 1936 and in Tennessee in 1937 with the result that the following records pertain to the eastern bird:

²² Louisiana Dept. Cons. Bull. 28, 1938, p. 675.

West Virginia (taken in 1936 unless otherwise noted): Middle Mountain, 12 miles northeast of Durbin, June 29; Middle Mountain, near Yokum Knob, July 4; Cranberry Glades, June 11 and 12; Ashton, October 31; 2,000 feet elevation on Cherry Pond Mountain, near Arnett, October 23; Orgas, October 24; 3,800 feet elevation on Cheat Mountain, 3 miles west of Cheat Bridge, September 25; Cheat Bridge, October 1, 1935; and 3,000 feet elevation on Williams River, Pocahontas County, October 3.

Tennessee (taken in 1937 unless otherwise noted): Hickory Withe, April 10; Reelfoot Lake, 2 miles east of Phillippy, October 12; 6 miles east of Pulaski, November 4; Rockwood, March 19, 20, and 23, 1885.

MELOSPIZA GEORGIANA ERICRYPTA Oberholser²³: Western Swamp Sparrow

As indicated above the swamp sparrow of the western area of the general range may be separated on the basis of lighter coloration above, the brown of rump and back being distinctly lighter, with the brownish edgings of the dorsal feathers paler and the gray of the hindneck and sides of the neck paler. In fall these birds are also lighter in color, especially on the rump and upper tail coverts. As stated in the account of the eastern form the gray hues in fall are somewhat darker, so that there is sometimes no distinction here.

These differences I have worked out from comparison of 10 breeding males from West Virginia, western Pennsylvania, and Massachusetts and 7 from Alberta (the type locality) and Mackenzie. The characters once established are evident in migrant birds, but I am not prepared at present to attempt to outline the distribution. Oberholser's statement that the western birds are smaller is not borne out by measurements that I have made, the two groups being practically identical.

Following are specimens obtained as migrants in Kentucky that I have assigned to this race: Canton, October 31; South Carrollton, October 18 and 24; Roundhill, November 7 and 11; and Brandenburg, April 23.

The following specimens from West Virginia pertain to this form (taken in 1936): Huntington, May 2; Barboursville, October 26; Mercers Bottom, October 30 and November 2; and 2,900 feet elevation on Flat Top Mountain near Ghent, October 14.

From Tennessee the following were obtained (taken in 1937 unless otherwise noted): Hickory Withe, April 10 and 16; 3 miles north of Tiptonville, October 16; Reelfoot Lake, 2 miles east of Phillippy, Oc-

²³ *Melospiza georgiana ericrypta* Oberholser, Louisiana Dept. Cons. Bull. 28, 1938, p. 675 (Fort McMurray, Alberta).

tober 23; Dover, October 26; 6 miles east of Frankewing, November 4; Rockwood, March 19, 1885.

MELOSPIZA MELODIA EUPHONIA Wetmore: *Mississippi Song Sparrow*

The abundant song sparrow is found throughout the State, all of a long series of specimens obtained belonging to the present form. Following are localities at which it was collected: Ohio River, near Uniontown, May 5; Canton, October 29 and November 1; Madisonville, October 20 and 21; South Carrollton, October 27; Brandenburg, May 2; Roundhill, November 7, 9, and 11; Bardstown, September 21, 1881 (taken by C. W. Beckham); Lexington, November 17, 1898 (taken by E. A. Mearns); English, October 12; Bedford, October 13; Burlington, October 10; Mount Vernon, October 3 and 4; Middlesboro, September 28; Cumberland, June 25; and Quincy, July 11 and 12.